UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

December 18, 2018

MEMORANDUM

Subject: Browns Tree Care Dump – Evaluation of December 12 Preliminary Air Sampling Results

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To: Matthew Loesel
On-Scene Coordinator

Summary:

The memorandum provides an evaluation of air sampling results for the Browns Tree Care Dump facility near Bella Vista, Arkansas. Twenty-four-hour air samples for volatile organic compounds (VOCs) were collected on December 12, 2018. The air samples were collected at four locations, which included an on-site sample location (BVF-SUM-013), and three off-site locations.

BVF-SUM-013 – Brown Tree Care on-site location. The following VOCs were identified above the laboratory detection limits:

- Acetone
- Tetrahydrofuran
- Benzene
- Toluene
- Ethyl Benzene
- m,p-Xylene

BVF-SUM-011 – Webb Lane, located approximately 0.25 miles north and west of the site. This sample location is at a higher elevation than the site. The following VOC was identified above the laboratory detection limits:

- Benzene

BVF-SUM-012 – Sutherland Lane, located approximately 0.1 miles north and east of the site. This sample location is at a higher elevation than the site. The following VOC was identified above the laboratory detection limits:

- Benzene

BVF-SUM-014 – Mary Ann Lane, located approximately 0.25 miles south and east of the site. This sample location is at a higher elevation than the site. No VOCs were identified above the laboratory detection limits for samples collected at this location during the two sampling events.

EPA Regional Screening Levels (RSLs) for residential air are used to identify compounds that need additional evaluation and are not intended to be directly used as air action levels. The results of the VOC sampling were compared to both the chronic RSL (70 years) and the subchronic (2 weeks to 7 years) RSL for residential air. The RSLs represent levels which are without adverse non-cancer effects over a time period.

VOCs detected at all the off-site sample locations (BVF-SUM-011, BVF-SUM-012 and BVF-SUM-014) did not exceed the chronic RSLs, and are therefore, at acceptable levels.

The maximum concentration of Benzene was identified at the on-site sample location (BVF-SUM-013) at a level of 21 $\mu g/m^3$. Benzene was also detected at BVF-SUM-011 and BVF-SUM-012 at levels of 2.7 and 3.3 $\mu g/m^3$, respectively. These are all below the chronic RSL of 31 $\mu g/m^3$.

Discussion of each VOC detected above the detection limit and compared to screening levels is as follows.

- Acetone – Detected at BVF-SUM-013 (on-site) at a concentration of 38 $\mu g/m^3$. Acetone has a screening level of 32,000 $\mu g/m^3$. Therefore, acetone is unlikely to cause adverse health effects. In addition, acetone is a common laboratory contaminant.

- Tetrahydrofuran - Detected at BVF-SUM-013 (on-site) at a concentration of 5.0 $\mu g/m^3$. The screening level for tetrahydrofuran is 2,100 $\mu g/m^3$; therefore, tetrahydrofuran is unlikely to cause adverse non-cancer health effects.

- Benzene – On-site sample location (BVF-SUM-013, on site) had the highest benzene level (21 $\mu g/m^3$) and two off-site sample locations (BVF-SUM-011, Webb Lane north and west of site; and BVF-SUM-012, Sutherland Lane north and east of site) had concentrations of 2.7 and 3.3 $\mu g/m^3$, respectively. Benzene has a chronic (i.e., 70 years) non-cancer screening level of 31 $\mu g/m^3$. None of these samples exceeded the chronic (i.e., 70 year) non-cancer screening level of 31 $\mu g/m^3$. Therefore, all off-site sample results for benzene in air are at an acceptable level.

  Benzene has an Acute Exposure Guideline Levels (AEGLs). The AEGL-1 is the level of a compound that is predicted that the public, including sensitive individuals, could experience discomfort and irritation. However, the effects are not disabling, are temporary and reversible upon cessation of exposure. The eight-hours AEGL-1 for benzene is 28,000 $\mu g/m^3$. The twenty-four-hour on-site sample location level of 21 $\mu g/m^3$ was over 1300 times less than the eight-hour AEGL-1 for benzene.

- Toluene – Detected at BVF-SUM-013 (on-site) at a concentration of 13 $\mu g/m^3$. Toluene has a screening level of 5,200 $\mu g/m^3$. Therefore, toluene is unlikely to cause adverse effects.

- m,p-Xylene - m,p-Xylene was detected only at BVF-SUM-013 (on-site) at a concentration of 4.4 $\mu g/m^3$. m,p-Xylene has a screening level of 100 $\mu g/m^3$. Therefore, m,p-Xylene is unlikely to cause adverse health effects.